



# Assembly

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## **Report of the Secretary-General of the International Seabed Authority under article 166, paragraph 4, of the United Nations Convention on the Law of the Sea**

### **I. Introduction**

1. The present report of the Secretary-General of the International Seabed Authority is submitted to the Assembly of the Authority under article 166, paragraph 4, of the 1982 United Nations Convention on the Law of the Sea ("the Convention"). It covers the work of the Authority since the eleventh session. It also reviews the progress of the 2005-2007 work programme of the Authority and addresses current issues relevant to the work of the Authority.

### **II. Membership of the Authority**

2. In accordance with article 156, paragraph 2, of the Convention, all States parties to the Convention are ipso facto members of the Authority. As at 2 May 2006, 148 States and the European Community were parties to the Convention and hence members of the Authority (see [www.un.org/Depts/los/convention\\_agreements/convention\\_agreements.htm](http://www.un.org/Depts/los/convention_agreements/convention_agreements.htm)).

3. The Convention and the Agreement relating to the implementation of part XI of the Convention ("the 1994 Agreement"), adopted on 28 July 1994 by the United Nations General Assembly in its resolution 48/263, together contain the regime for the administration of the deep seabed and its resources. As at 30 May 2006, the following 26 members of the Authority that became parties to the Convention prior to the adoption of the 1994 Agreement had not yet become parties to the 1994 Agreement: Angola, Antigua and Barbuda, Bahrain, Bosnia and Herzegovina, Brazil, Cape Verde, Comoros, Democratic Republic of the Congo, Djibouti, Dominica, Egypt, Gambia, Ghana, Guinea-Bissau, Guyana, Iraq, Mali, Marshall Islands, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Somalia, Sudan, Uruguay and Yemen. By its terms, the Agreement is an integral part of the Convention and is applied as such. Therefore, becoming a party to the Agreement would remove an incongruity that currently exists for those States which are parties only to the Convention.



4. Each year since 1998, upon repeated request by the Assembly, the Secretary-General has circulated a note verbale to all members listed above urging them to consider becoming parties to the 1994 Agreement. In the last such note, dated 14 March 2006, attention was drawn to the relevant paragraphs of the report of the Secretary-General for 2005 (ISBA/11/A/4) as well as to paragraph 2 of General Assembly resolution 60/30, calling upon all States to become parties to both the Convention and the Agreement in order to achieve the goal of universal participation in the two instruments.

### **III. Permanent representatives to the Authority**

5. As at 30 May 2006, Argentina, Belgium, Brazil, Cameroon, Chile, China, Costa Rica, Cuba, France, Gabon, Germany, Haiti, Honduras, Italy, Jamaica, Mexico, Nigeria, Saint Kitts and Nevis, South Africa, Spain and Trinidad and Tobago had established permanent missions to the Authority.

### **IV. Sessions of the Authority**

6. The eleventh session of the Authority was held from 15 to 26 August 2005. Mr. Olav Mykleburst (Norway) was elected President of the Assembly for the eleventh session. Mr. Park Hee-kwon (Republic of Korea) was elected President of the Council.

7. The work of the Assembly during the eleventh session included a debate on the annual report of the Secretary-General and consideration of the report of the Finance Committee. The Assembly also paid tribute to Mr. Kenneth Rattray (Jamaica), who had passed away in January 2005.

8. The Council, acting on the recommendation of the Legal and Technical Commission, approved an application for a plan of work for exploration for polymetallic nodules in the international seabed Area submitted by Germany, represented by the Federal Institute for Geosciences and Natural Resources (ISBA/11/C/10). The Secretary-General was requested to take the steps necessary to issue the plan of work for exploration in the form of a contract between the Authority and Germany. It was noted that the application for a plan of work for exploration by Germany was the first such new application to have been made since the Convention had entered into force. As such, it represented confidence in the International Seabed Authority and in the system established to administer the resources of the Area.

9. The Council also completed a first reading of the draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts prepared by the Legal and Technical Commission (ISBA/10/C/WP.1).

## **V. Relations with the host country**

10. Since the previous session, the secretariat has held further consultations with the Government of Jamaica concerning the employment of spouses of staff members of the Authority. Restrictions on the availability of work permits had previously been noted as an obstacle to the recruitment of qualified staff. Following the consultations, the Secretary-General is pleased to report that Jamaica has proposed an acceptable procedure to facilitate the issuance of work permits to the spouses of staff members of the Authority in order to enable them to accept offers of employment.

11. The Secretary-General also expresses his appreciation to the Jamaican authorities for their efforts to provide the necessary facilities for the annual session of the Authority.

## **VI. Protocol on Privileges and Immunities**

12. The Protocol on Privileges and Immunities of the Authority entered into force on 31 May 2003. As at 30 May 2006, the following 17 members of the Authority had become parties to the Protocol: Austria, Cameroon, Chile, Croatia, Czech Republic, Denmark, Egypt, India, Jamaica, Mauritius, Netherlands, Nigeria, Oman, Slovakia, Spain, Trinidad and Tobago and United Kingdom of Great Britain and Northern Ireland. The Secretary-General urges other members of the Authority to consider becoming parties to the Protocol which, inter alia, provides essential protection to representatives of members of the Authority who attend meetings of the Authority or who travel to or from those meetings.

## **VII. Relations with the United Nations and other bodies**

13. The Authority maintained its close working relationship with the Division for Ocean Affairs and the Law of the Sea of the Office of Legal Affairs of the United Nations. Along with other international organizations and bodies concerned with ocean-related activities, the Authority is also a participant in the Oceans and Coastal Areas Network (UN-Oceans).

### **A. Oceans and Coastal Areas Network**

14. The objective of UN-Oceans is to enhance cooperation among and coordination of United Nations activities related to ocean and coastal areas. While the mandate of the Authority, which is set out in the Convention and the Agreement, is specific, the Authority is pleased to cooperate with other relevant organizations and, to that end, attended the first meeting of UN-Oceans, held at the Intergovernmental Oceanographic Commission (IOC) at the United Nations Educational, Scientific and Cultural Organization (UNESCO) in Paris in January 2005.

## **B. United Nations Atlas of the Oceans**

15. The United Nations Atlas of the Oceans is a collaborative effort by the Food and Agriculture Organization of the United Nations, the International Atomic Energy Agency, the International Maritime Organization (IMO), IOC, the World Conservation Monitoring Centre of the United Nations Environment Programme (UNEP), the World Meteorological Organization, the secretariat of the Convention on Biological Diversity and the Authority, and the National Oceanic and Atmospheric Administration (NOAA) (United States), the Head Department of Navigation and Oceanography (Russian Federation), the World Resources Institute, the Census of Marine Life, National Geographic and the World Ocean Observatory. It is an information system designed for use by policymakers who need to become familiar with ocean issues and by scientists, students and resource managers who need access to underlying databases and approaches to sustainability. The Atlas is an Internet portal that is divided into four main gateways, titled “About the oceans”, “Uses of the oceans”, “Ocean issues” and “Geography”. With links to United Nations and other databases and websites, its contents include an encyclopedia of information relevant to sustainable development, information on ocean uses, resources, technology, development, management, cross-sectoral issues and geographic information.

16. The Authority’s contribution to the Atlas will be its specialized databases on deep seabed mineral resources, maps of the known mineral provinces in the Area, including available data and information on the bathymetry of those areas, the biodiversity that has been identified in the areas and thematic maps highlighting special issues and concerns.

## **C. United Nations General Assembly Task Force to establish a Regular Process for a Global Marine Assessment**

17. In 2005, the General Assembly endorsed the conclusions of the second International Workshop on the regular process for global reporting and assessment of the state of the marine environment (resolution 60/30, para. 89). It also launched the start-up phase, the “assessment of assessments”, which was to be completed within two years. An Ad Hoc Steering Group was established to oversee the “assessment of assessments” under the guidance of UNEP and IOC. The Authority was invited to participate in the Steering Group and took part in its first meeting, held in New York from 7 to 9 June 2006.

18. At its first meeting, the Ad Hoc Steering Group considered a review of the updated survey on regional and global marine assessments conducted by the World Conservation Monitoring Centre, the scope, structure, methodology, process and timeline of the “assessment of assessments”, the criteria for the selection of experts, the question of whether to invite observers to the meetings of the Steering Group and the budget and resource mobilization for the assessment of assessments.

## **VIII. Secretariat**

19. During the period under review, the structure of the secretariat continued to evolve in line with the proposals presented in the programme of work for the period

2005-2007. In particular, the technical capabilities of the secretariat were further strengthened by the recruitment of a marine geologist and a geographic information systems officer.

## **IX. Budget and finance**

### **A. Budget**

20. For the financial period 2005-2006, the Assembly of the Authority adopted a budget of \$10,800,000. While this represented a nominal average increase of 1.45 per cent for each year of the financial period compared to the previous period (2003-2004), when inflationary factors are considered it represents another budgetary decrease in real terms. For the financial period 2007-2008, the Secretary-General proposes a budget of \$12,198,000.

### **B. Status of contributions**

21. In accordance with the Convention and the 1994 Agreement, the administrative expenses of the Authority shall be met by assessed contributions of its members until the Authority has sufficient funds from other sources to meet those expenses. The scale of assessments shall be based on the scale used for the regular budget of the United Nations, adjusted for differences in membership. As at 31 May 2006, 78 per cent of the value of contributions to the 2006 budget due from member States and the European Community had been received from 31 per cent of the Authority's membership.

22. Contributions outstanding from member States for prior periods (1998-2005) totalled \$358,672. Notices are regularly sent to member States reminding them of the arrears. In accordance with article 184 of the Convention and rule 80 of the rules of procedure of the Assembly, a member of the Authority that is in arrears in the payment of its financial contribution shall have no vote if the amount of its arrears equals or exceeds the amount of financial contribution due from it for the preceding two years. As at 31 May 2006, 51 members of the Authority were in arrears for a period of two years or more. They were: Albania, Algeria, Bahrain, Belize, Benin, Bolivia, Cameroon, Cape Verde, Comoros, Cook Islands, Côte d'Ivoire, Democratic Republic of the Congo, Djibouti, Dominica, Equatorial Guinea, Gabon, Gambia, Georgia, Grenada, Guinea, Guinea-Bissau, Haiti, Honduras, Iraq, Kenya, Luxembourg, Mali, Mauritania, Micronesia (Federated States of), Mongolia, Nauru, Panama, Paraguay, Saint Lucia, Saint Vincent and the Grenadines, Sao Tome and Principe, Seychelles, Sierra Leone, Solomon Islands, Somalia, Suriname, the former Yugoslav Republic of Macedonia, Togo, Tuvalu, Uganda, Uruguay, Vanuatu, Yemen, Serbia, Zambia and Zimbabwe.

23. Also as at 31 May 2006, the balance of the Working Capital Fund stood at \$440,686, which exceeded its approved ceiling (\$438,000) by \$2,686.

### **C. Voluntary trust fund**

24. A voluntary trust fund for the participation of members of the Finance Committee and the Legal and Technical Commission from developing countries was established in 2002, following a request by the Assembly to enhance the participation of members from developing countries in the meetings of the Legal and Technical Commission and the Finance Committee. Prior to the establishment of the fund, attendance at meetings of the two bodies by members from developing countries had been generally poor, ostensibly for financial reasons. That situation has improved since the fund was established. Provisional terms and conditions for the use of the fund were adopted by the Assembly, on the recommendation of the Finance Committee, in 2003 and amended in 2004 (see ISBA/9/A/9, para. 14, and ISBA/9/A/5-ISBA/9/C/5).

25. The fund is made up of voluntary contributions from members of the Authority and others. Over the life of the fund, contributions totalling \$52,800 have been received from Angola (\$300), Indonesia (\$1,000), Namibia (\$1,300), Nigeria (\$5,000), Norway (\$25,000), Oman (\$10,000), Trinidad and Tobago (\$10,000) and Dr. Y. Kazmin (\$200).

26. In 2003, to supplement the voluntary contributions, the Assembly, on the recommendation of the Finance Committee, authorized an advance of \$75,000 to be paid into the fund from the interest from the fund for application fees paid by former registered pioneer investors (see ISBA/9/A/5-ISBA/9/C/5). At the eleventh session, the Assembly, on the recommendation of the Finance Committee, authorized the Secretary-General to advance, to the extent necessary, a further \$60,000 for the operation of the voluntary fund in 2006 from the same source (see ISBA/11/A/8).

27. As at 31 May 2006, the balance of the fund stood at \$38,985, including interest income of \$1,559. The total amount paid out of the fund to date is \$90,375.

### **D. Fund for fees paid by the registered pioneer investors**

28. In accordance with the provisions of paragraph 7 (a) of resolution II of the Third United Nations Conference on the Law of the Sea, each of the former registered pioneer investors paid to the Preparatory Commission for the International Seabed Authority and the International Tribunal for the Law of the Sea ("Preparatory Commission") an application fee for registration. The application fees were placed in a trust account which was administered by the United Nations in accordance with its Financial Regulations and Rules, and, *mutatis mutandis*, the rules applicable to the management of trust funds. The terms of reference stated that the Secretary-General of the United Nations would act as the custodian of the funds on behalf of the Preparatory Commission and would (as required by resolution I of the Conference) transfer the balance of the funds to the International Seabed Authority upon its establishment.

29. In 1997, following the establishment of the Authority, the balance of funds remaining in the account was transferred to the Authority. The balance, together with the interest earned thereon, has been maintained in a separate bank account pending a full accounting of all the expenditures incurred by the Preparatory Commission for the processing of the applications as well as the expenses incurred in processing applications for the approval of the plans of work for exploration

submitted by former registered pioneer investors (see 1994 Agreement annex, sect. 1, para. 6 (a) (ii)). This has required extensive research and extrapolation of the costs based on the standard costing method for conference services, travel costs and other services. It is expected that such an account will be available prior to the twelfth session. As at the date of the last audit statement (31 December 2005), the total amount in the account was \$2,880,958, including cumulative interest of \$1,412,121.

30. At the eleventh session, the Secretary-General proposed that the existing balance available in the fund be transferred to a special endowment fund account, the income from which could be utilized for appropriate purposes, as decided from time to time by the Assembly on the recommendation of the Council and the Finance Committee. Primarily, these purposes would be to promote marine scientific research and provide opportunities for qualified scientists from institutions in developing countries to participate in research activities conducted by international scientists at sea or in laboratories of scientific institutions. Income from the fund could also be used to supplement the voluntary trust fund. Following consideration by the Finance Committee, the Assembly requested the Secretary-General to submit a detailed proposal for the establishment and use of the proposed endowment fund for the consideration of the Finance Committee at the twelfth session.

## **X. Library, publications and website**

31. The library manages the Authority's specialized collection of reference and research materials focusing on matters relating to the law of the sea and deep seabed mining. The objective is to provide a comprehensive collection of reference materials on relevant subject matters. The library serves the needs of members of the Authority, permanent missions and researchers interested in the law of the sea and ocean affairs, as well as providing essential reference and research assistance to the staff of the secretariat. In addition, the library is responsible for the archiving and distribution of the official documents of the Authority and assists with the publication programme.

32. The regular publications of the Authority include an annual compendium of selected decisions and documents of the Authority (published in English, French and Spanish) and a handbook containing details of the membership of the Assembly and the Council, the names and addresses of permanent representatives and the names of the members of the Legal and Technical Commission and the Finance Committee. A complete list of all the current publications issued by the Authority may be found on the Authority's website (<http://www.isa.org.jm>).

33. The library facilities include a reading room with access to the collection for reference purposes only and computer terminals for e-mail and Internet access. As part of the effort to make available an expanded and reliable source of online information resource tools, a range of electronic and full-text document services are being explored. This includes the United Nations System Electronic Information Acquisition Consortium, which is available to United Nations programmes and agencies and provides access to a number of online documentation and information services. The collections development and management programme has continued to build on the library's comprehensive collection of reference materials and to strengthen the specialized research capability of the existing collection. During the

reporting period, approximately 140 books, various CD-ROMs and over 450 journal issues were acquired. This includes donations from individuals as well as from institutions and libraries, including from the Division for Ocean Affairs and the Law of the Sea and the International Tribunal for the Law of the Sea.

34. The Authority's website contains essential information on the activities of the Authority, primarily in English, French and Spanish. The texts of all the official documents and decisions of the organs of the Authority are available in the six official languages of the United Nations. Press releases are available in English and French. The Authority's workshop reports, technical reports and joint publications are also published electronically in a downloadable format. During 2006, it is planned to undertake a major upgrade of the existing website to provide greater functionality and ease of access to users. The existing website was launched in 1997 and has not only outgrown its original architecture, but has also been overtaken by technological developments.

35. During the period under review, in addition to the increasing number of requests for copies of the publications and documents of the Authority, requests were processed for information on a number of subject areas related to the activities of the Authority, including on the development of technologies for metallurgical processing of marine nodules, the potential for mining marine minerals in the Philippines, the legal regime of archipelagic States and the exploitation of marine resources, as well general information on the Authority, including on its structure and functioning. Most of the requests are received electronically. The requests came from individuals and a variety of academic and research institutions, including the Coordination Office for Continental Shelf Surveys; the Government of Japan; IOM Communications (United Kingdom); the Geological and Mining Institute of Spain; the Mediterranean Academy of Diplomatic Studies of the University of Malta; the Society for Mining, Metallurgy and Exploration; the Max Planck Institute for Comparative and International Private Law; the National Library of Germany; Oxford University Press; Las Positas College (United States of America); the University of Rome "La Sapienza"; the UNEP Caribbean Regional Programme; the University of Alberta (Canada); the University of Houston Law Center (United States); the University of Southampton (United Kingdom); the National Environment and Planning Agency of Jamaica; the University of the West Indies Department of Government; and individuals in Brazil, India, Japan, Myanmar, the Netherlands, Pakistan and the Philippines.

## **XI. Substantive work of the Authority**

36. The basic function of the Authority, within the overall framework established by the Convention and the 1994 Agreement, is to manage the mineral resources of the Area, which are the common heritage of mankind, in such a way as to give effect to the principles contained in part XI of the Convention and the 1994 Agreement. In so doing, the Authority is required to ensure effective protection of the marine environment, and therefore biodiversity, from harmful effects that may arise from exploration for and subsequent exploitation of those resources (Convention, article 145). In addition, the Authority has a general responsibility to promote and encourage the conduct of marine scientific research in the Area and to coordinate and disseminate the results of such research and analysis (article 143, para. 2). All States have the right to carry out marine scientific research in the Area (article 256),



but such research must be carried out exclusively for peaceful purposes and for the benefit of mankind as a whole (article 143, para. 1).

37. The Authority is carrying out its mandate in the following ways. First, it has adopted regulations governing prospecting and exploration for polymetallic nodules. Regulations governing prospecting and exploration for polymetallic sulphides and cobalt-rich crusts are presently under consideration. These regulations form the essential framework through which the Authority can manage the resources of the Area. Given the dearth of knowledge of the marine environment of the Area and the potential impact of mineral exploration and exploitation on its biodiversity, the regulations have a strong environmental focus. In addition, they are flexible in that they allow the Legal and Technical Commission to issue guidance to contractors with the Authority relating to such matters as environmental impact assessments and the standardization of relevant environmental data and information. Second, pursuant to the regulations, the Authority has entered into contractual relationships with those entities wishing to explore for mineral resources in the Area.

38. The Authority also carries out its mandate by promoting and encouraging international cooperation in marine scientific research, establishing databases on species to be found in potential exploration and mining areas and their distribution and encouraging the use of a uniform taxonomy and other standardized data and information. It has also participated in international cooperative scientific projects designed to increase the international community's knowledge of species ranges and distribution in the Area.

39. Since 1998, the Authority has held workshops and seminars on specific issues related to deep seabed mining, with participation by internationally recognized scientists, experts, researchers and members of the Legal and Technical Commission as well as representatives of contractors, the offshore mining industry and member States. The workshops have dealt with a variety of topics, including the assessment of environmental impacts from activities in the Area, the development of technology for deep seabed mining, the status and prospects of deep-sea mineral resources other than polymetallic nodules, standardization of techniques for data collection and analysis and prospects for international collaboration in marine environmental research to enhance understanding of the deep-sea environment, including its biodiversity.

## **A. Contracts for exploration for polymetallic nodules**

40. In 2001 an important milestone was reached when, following the adoption in 2000 of the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area (ISBA/6/A/18, annex), the Authority entered into the first 15-year contracts for exploration for polymetallic nodules in the deep seabed. The signature of the contracts gave practical and real effect to the single regime for the Area established by the Convention, the 1994 Agreement and the Regulations. Most importantly, it brought to an end the interim regime established by resolution II of the Third United Nations Conference on the Law of the Sea. Between March 2001 and March 2002, the Authority entered into contracts with all of the former registered pioneer investors, namely, Deep Ocean Resources Development Company (DORD) (Japan); China Ocean Mineral Resources Research and Development Association (COMRA); the Southern Production Association for Marine Geological Operations

(Yuzhmorgeologiya) (Russian Federation); the Interoceanmetal Joint Organization (IOM); the French Research Institute for the Exploitation of the Sea (IFREMER); and the Governments of India and the Republic of Korea.

41. As noted in paragraph 8, above an application for a plan of work for exploration for polymetallic nodules by Germany, represented by the Federal Institute for Geosciences and Natural Resources, was approved by the Council during the eleventh session. A contract with Germany is to be signed in Berlin on 18 July 2006.

42. The relationship between the contractors and the Authority is governed by the standard clauses of the Regulations on Prospecting and Exploration for Polymetallic Nodules in the Area. One of the consequences of the existence of such a contractual relationship is the obligation for contractors to submit annual reports in accordance with the provisions of the contract. In that regard, the standard clauses set out in annex 4 to the Regulations contain detailed provisions relating to the format and content of such annual reports. The objective of these reporting requirements is to establish a mechanism whereby the Authority, and particularly the Legal and Technical Commission, can be provided with the information necessary to carry out its responsibilities under the Convention, particularly those relating to protection of the marine environment from the harmful effects of activities in the Area. Additional technical guidance, issued by the Legal and Technical Commission in 2001 (ISBA/7/LTC/1/Rev.1), has been provided to contractors. The purpose of the recommendations for guidance is to describe the procedures to be followed in the acquisition of baseline data by contractors, including the monitoring to be performed during or after any activities having the potential to cause serious harm to the environment, and to facilitate reporting by contractors.

43. The first set of annual reports was submitted in 2002. These were considered by the Legal and Technical Commission at its meeting during the eighth session. The Commission then prepared a report and evaluation of the annual reports, including requests for clarification of certain aspects. To facilitate future reporting by contractors, the Commission also developed a standardized form of annual report, based on the provisions of the Regulations (ISBA/8/LTC.2, annex). The Commission also recommended that contractors be given the opportunity to present their annual reports if they wished at the meeting of the Commission in order to respond to questions or provide further information concerning the report.

44. Annual reports were submitted in 2003, 2004 and 2005 and in each year the Commission issued a report and evaluation of them (ISBA/9/LTC/2, ISBA/10/LTC/3, ISBA/11/LTC/4). The Secretary-General then forwarded the evaluations to the contractors accompanied, where appropriate, by any requests for clarification or further information. To improve its consideration of the annual reports, the Commission has, from the ninth session to date, adopted a practice of requesting a small technical subcommittee of the Commission to meet informally immediately prior to the annual session in order to carry out a preliminary evaluation of the annual reports and prepare a draft evaluation report for consideration by the full Commission. Each year, the Commission has made a number of general and specific recommendations to contractors aimed at improving the quality and consistency of reporting. In general, these recommendations have been acted on by contractors. As a result, at the eleventh session, the Commission

noted that the reports submitted by all contractors showed improvements in both form and content from previous years.

45. The Regulations provide for periodic review of the implementation of plans of work for exploration at intervals of five years. This is to be achieved through consultations between contractors and the Secretary-General. As part of the review, the contractor shall indicate its programme of activities for the following five years, making such adjustments to its previous programme of activities as are necessary. The Secretary-General may request the contractor to submit such additional data and information as may be necessary for the purposes of the review. The Secretary-General is required to report on the review to the Commission and the Council.

46. For the seven former registered pioneer investors, 2006 marks the end of the first five-year programme of work since the contracts were issued. This provides an opportunity for the contractors to provide a comprehensive account of the work carried out and results obtained during the period, as well as a review of the expenditures incurred during the programme. In its consideration of the annual reports during the eleventh session, the Commission noted that, in the case of some of the contractors, there have been significant variations in the projected expenditures, which might suggest changes in the original five-year programme of work. In such cases, the Commission recommended that the contractor submit a revised programme of work to the Secretary-General in accordance with paragraph 4.4 of annex 4 to the Regulations.

47. As at 30 May 2006, annual reports for the current year had been submitted on time by the Governments of India and the Republic of Korea, DORD, COMRA, Yuzhmorgeologiya and IOM.

## **B. Regulations for prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area**

48. During the eleventh session the Council completed a first reading of the draft regulations on prospecting and exploration for polymetallic sulphides and cobalt-rich ferromanganese crusts in the Area prepared by the Legal and Technical Commission (ISBA/10/C/WP.1). At the conclusion of that first reading, the Council considered that further explanation and elaboration was required with respect to certain aspects of the draft regulations. In particular, it requested the Secretary-General to provide the Council with more detailed analysis and elaboration of the following aspects of the draft regulations:

(a) With respect to prospecting, the Council requested further clarification of the relationship between prospecting and exploration and the justifications for the specific changes proposed by the Commission;

(b) With respect to the size of areas for exploration, the Council requested that further information be provided on the proposed system of allocating exploration blocks and the way in which it might operate in practice as well as on the proposed schedule for relinquishment and its consistency with the provisions of the Convention;

(c) With respect to draft regulations 16 and 19, relating to the proposed system for participation by the Authority, the Council requested a more detailed

analysis of how the draft provisions might operate in practice in the light of the comments and opinions expressed in the Council;

49. In addition, the Council requested a more detailed analysis of the proposed language in the draft regulations relating to protection of the environment and their relationship to the provisions of the 1982 Convention and the 1994 Agreement. Particular concern was raised over the proposed changes to the language in draft regulations 33 to 36.

50. It was agreed to resume consideration of the draft regulations at the twelfth session. In the meantime, the secretariat would prepare a revised text of the draft in order to address some of the technical issues that had been raised during the first reading as well as to correct a number of errors in translation that had been noted by delegations (see ISBA/10/C/WP.1/Rev.1). The secretariat would also provide additional technical papers and analyses of a number of issues identified by the Council.

### **C. Protection of the marine environment and biodiversity in the Area**

51. In recent years, the issue of conservation and sustainable use of marine biodiversity has attracted increased international attention. This resulted in a series of decisions taken by the General Assembly under its agenda item on oceans and the law of the sea. By its resolution 59/24 of 17 November 2004, the General Assembly decided to establish an Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction: (a) to survey the past and present activities of the United Nations and other relevant international organizations with regard to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction; (b) to examine the scientific, technical, economic, legal, environmental, socio-economic and other aspects of these issues; (c) to identify key issues and questions where more detailed background studies would facilitate consideration by States of these issues; and (d) to indicate, where appropriate, possible options and approaches to promote international cooperation and coordination for the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction.

52. The Working Group was convened in New York from 13 to 17 February 2006. The Authority participated in the Working Group as an observer. Among the key trends emerging from the Working Group and reflected in the summary of trends issued by its co-chairmen were the reaffirmation that the General Assembly, as the global institution that has the competence to undertake reviews of issues relating to oceans and the law of the sea, has a central role in addressing issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction. Other organizations, processes and agreements also have an essential complementary role within areas of their respective competence. At the same time, the international community needs to improve sharing among all States of knowledge from research programmes, including the availability and maintenance of data, samples and research findings and how to facilitate greater participation of scientists from developing countries in such research. It was specifically recognized that the Authority has an important role in that regard.

53. The Working Group also identified a number of specific areas for increased study. Some of these areas of study, such as the need for improved understanding of the extent and nature of marine biological diversity and anthropogenic impacts beyond areas of national jurisdiction, are highly relevant to the work of the Authority and have been considered in some of the international workshops it has convened. For example, the Authority's seventh workshop, held in September 2004, focused on the environment of polymetallic sulphides and cobalt-rich crusts and considerations for the establishment of environmental baselines and an associated monitoring programme for exploration. The results of this workshop were presented to the Legal and Technical Commission at the eleventh session. It is expected that these results will facilitate the work of the Commission when it embarks on the task of issuing recommendations for the guidance of contractors for the assessment of the possible environmental impacts arising from exploration for cobalt-rich ferromanganese crusts and seafloor polymetallic sulphide deposits in the Area.

54. One of the conclusions from the 2004 workshop was that not enough was known about the patterns of diversity and endemism at seamounts, the environments where cobalt-rich crusts are found. The Authority decided therefore to investigate this matter further by convening its eighth workshop, in March 2006. The workshop, which was convened in collaboration with the Seamounts Group of the Census of Marine Life, was held in Kingston from 27 to 31 March 2006. It was entitled "Cobalt-rich crusts and the diversity and distribution patterns of seamount fauna". The objectives of the workshop were to assess patterns of diversity and endemism of seamount fauna, including the factors that drive those patterns, to examine gaps in current knowledge of the patterns with a view to encouraging collaborative research to address them and to provide the Legal and Technical Commission with information to assist it in developing environmental guidelines for future contractors. Those aims were fulfilled through a series of presentations by invited participants who were experts in their respective fields. This was followed by meetings of working groups that discussed the issues in greater detail and carried out a provisional analysis of endemism and species distributions in the Pacific and Atlantic Oceans. A total of 38 participants from 15 countries attended the workshop. The full agenda, participant list and each presentation are available on the Authority's website, along with other information relevant to the workshop. The proceedings of the workshop, including papers, presentations and discussions following the presentations, are being prepared for publication.

#### **D. Information and data relating to the international seabed area**

55. One of the substantive tasks to be undertaken by the secretariat during the period 2005-2007 is to continue to develop the Central Data Repository. In 2006, a bibliographic database was established, populated by, among other things, a citation database called "web of science". It is intended to expand the database to incorporate articles not found using initial search terms and selection criteria, including policy and legal documents and additional information on resources other than polymetallic nodules and the environments in which they occur.

56. Work on the Repository will proceed in a number of other areas. In addition to updating the contents of the Repository, work will be undertaken on its accessibility (a user area for guests to upload non-proprietary data and to query the database). The contents of the Repository will also be expanded to include an environmental

and biological database on the meiofauna in the Clarion-Clipperton zone, a web-enabled bathymetric database of the nodule provinces in the zone and the Central Indian Ocean basin and a separate web page for the results, data and reports from the geological model of polymetallic nodule deposits in the zone.

57. The Authority will make contributions to the United Nations Atlas of the Oceans through the provision of web-enabled maps of the ocean floor and its features, maps showing mineral resource distribution and sampling locations on the ocean floor, other thematic maps on special topics such as the economic potential of different mineral provinces in the Area and environmental and biological conditions in the provinces.

#### **E. Resource assessment and geologic model for the Clarion-Clipperton fracture zone**

58. During 2005 and 2006, the Authority continued its work to establish a geological model of polymetallic nodule deposits in the zone. Although it had been assumed that much of the data, information and expert contributions to model development promised by contractors with exploration areas in the zone would be available much earlier in the biennium, it was only at the beginning of 2006 that some of the data and information were made available. COMRA, DORD, IFREMER, IOM, the Korean Ocean Research and Development Institute (KORDI) and Yuzhmorgeologiya all indicated that they would provide varying amounts of data and information that they had in their possession on the zone. Those data and information related to bathymetry, nodule abundance, metal content and type, sedimentation, water column data and tectonic and volcanic activity. Much of the data expected were proxy data, including information on nodule types and species, the oxygen minimum zone, the carbon compensation depth, the benthic boundary layer and the evolutionary framework of the Pacific plate that underlies the zone. Because of delays in the provision of the data and information, as well as the paucity of such data in the public domain, some of the products that were to have been completed by the end of the reporting period were delayed. However, a considerable amount of data and information have since been provided by COMRA and KORDI and some from IOM, as well as all the data and information promised by DORD.

59. COMRA and KORDI have made available to the project significant nodule abundance and metal content data (777 and 232 stations respectively), gravity and magnetic data (6,610 points and figures for free-air anomalies and magnetic intensity), bathymetric data (approximately 250,000 XYZ points and multibeam data in 12 sectors in XYZ formats) and water chemistry data (800 stations and 1,993 dissolved oxygen data sets). In addition, COMRA has provided the project with multi-frequency exploration data (around 50,000 points), shallow stratum profiles (9 profiles), deep tow profiles (4), photographs of the nodules on the seafloor (9), sialite data (440 points), sediment types (1,500) and particle sizes of sediment (200). KORDI, for its part, has provided the project with data on nodule morphology and size (1,339 data points), accumulation rate/age of nodules, sediment distribution (facies) and thickness (4 lithologic units and 266 stations), the relationship between nodule abundance and sediment distribution (81 stations), the transparent layer (326 stations) and biology and primary productivity data. IOM has provided the project

with multibeam bathymetry data (200,000 data points that cover an area of 105,080 square kilometres in XYZ format).

60. In the area of expertise to assist in model development, COMRA has provided the project with the services of Huaiyang Zhou and Xiqu Han. KORDI has also provided the project with the services of Hyun-Sub Kim, Young-Tak Ko, Jong-Uk Kim and Ki-Seong Hyoeng. The services of Ryszard Kotlinski and other scientists from IOM have also been made available for the project.

61. IOM has indicated that it will soon provide the project with abundance and metal content data (1,090 stations), manganese to iron ratio data (800 stations), underwater photographs of selected areas from 60 locations, a report on the relationship between nodule abundance and metal content, sedimentation data, including the spatial distribution and thickness of sediments in selected profiles, data on the relationship between nodule abundance/grade and sediment thickness and facies distribution based on data from 260 stations, various water column data in the oxygen minimum zone (16 conductivity, temperature and depth recording stations), the carbonate content of sediments from 250 stations and tectonic and volcanic activity.

62. It is important to note that the additional data and information that have now been contributed by some of the contractors to the project represent a very significant step in the Authority's ability to deliver a robust geological model and prospectors' guide. These data will also significantly enhance resource assessment in the Clarion-Clipperton zone, providing greater confidence in the estimates of the metal resources to be found there.

63. It is to be recalled that the Polymetallic Nodule Deposit Database, the original database established by the Authority from the data and information provided by contractors on reserved areas when they registered to become pioneer investors, contained data from 2,141 sampling stations. At the start of the project to establish a geologic model, the data available, along with other data that had been acquired by the Authority from IFREMER, COMRA, NOAA and other public domain data were as follows:

(a) A total of 3,718 sampling station data (comprising 2,141 sampling station data from reserved areas, 725 sampling station data from the public domain, 613 additional sampling station data provided by IFREMER and 239 additional sampling data provided by COMRA);

(b) 8,342 depth measurements made available by COMRA;

(c) Multi-frequency exploration data provided by COMRA, containing 52,000 abundance measurements;

(d) Sedimentological data made available by COMRA;

(e) Bathymetric, gravimetric and magnetometric survey data sets from the NOAA Geophysical Data Centre, which include 2,413,000 points.

As described above, the volume of data currently available to the project is orders of magnitude greater.

64. While there has been some delay in the outputs that were anticipated in 2006, the following products have been prepared and are ready for incorporation as appropriate into the model:

- (a) A report and database containing available data and information on the oxygen minimum zone in the Clarion-Clipperton zone;
- (b) A report and database containing available data and information on the carbon compensation depth in the zone;
- (c) A report and database containing available data and information on the benthic boundary layer in the zone;
- (d) A report on chlorophyll as a proxy for high-grade and abundance nodules;
- (e) A report on nodule abundance;
- (f) An interim report on bathymetry.

65. Reports that have not been completed but that are awaiting the availability of additional data and information are:

- (a) A report and database containing available data and information on nodule types and species;
- (b) A report and database containing available data and information on the evolutionary framework of the Pacific plate that underlies the zone;
- (c) A report on sediment thickness and hiatuses;
- (d) A report on integration procedures for proxy data sets.

66. It is expected that by the end of 2006 a meeting of model developers will be convened to determine the most appropriate way to develop model components. The objective of the meeting will be to facilitate work in determining algorithms that generate predictions of nodule abundance and grade for any location in the zone based on each set of proxy data.

67. In 2007, the outputs expected from work on the geological model of polymetallic nodule deposits in the zone will consist of:

- (a) A report containing a description, interpretation and synthesis of biological data, including Geographic Information System-generated maps of parameter values for incorporation into the prospectors' guide;
- (b) A series of reports on each set of proxy data containing clearly defined algorithms that generate predictions of nodule abundance and grade;
- (c) A report on integration procedures for proxy data sets;
- (d) A report of the meeting of model developers to determine the most appropriate way to integrate proxy data sets;
- (e) A presentation to the Legal and Technical Commission informing it of progress in the work to establish the geological model;
- (f) A draft of a three-dimensional visualization of the prospectors' guide, with voice-over;
- (g) A first draft of the prospectors' guide;



(h) A report on ground-truth testing of the geological model's predictions using subsets of nodule grade and abundance data that are different from those used in calibrating input algorithms.

68. If the data and information that are forthcoming from the remaining contractors are provided during 2007, it is expected that the project will be completed in 2008. In this regard, it is anticipated that in 2008 the products from the project will consist of:

(a) Final drafts of the prospectors' guide and the geologic model, following a review by the secretariat and possibly independent experts;

(b) A workshop (the proceedings of which will be published) to present and discuss the key results of the prospectors' guide and the geological model;

(c) A presentation of final results to the Legal and Technical Commission;

(d) Publication of the prospectors' guide and the geological model, including their incorporation into the Central Data Repository.

## **F. International collaboration in marine scientific research**

### **1. The Kaplan project**

69. The Authority is currently collaborating in a major research project referred to as the Kaplan project because of its main source of funding, the J. M. Kaplan Fund of New York. The Kaplan project is an international research project carried out in the Clarion-Clipperton zone nodule province in the Pacific Ocean. The aims of the Kaplan project are to measure biodiversity, species ranges and gene flow in the zone. This information can be used to determine the level of risk introduced to the province's biodiversity as a result of mining for polymetallic nodules. The outputs will include a database of some of the important species found in the zone and their genetic sequences. This will be the first project of its kind to assess the genetic resources in the nodule province. The information on biodiversity derived from this project will be superimposed on the geological model that the Authority is also developing for that zone. The model will considerably enhance the international community's knowledge of the geological and biological environment of that area.

70. In March 2006, the Authority received the third and penultimate annual progress report on the Kaplan project. The report outlined that project activities were concentrated on processing and analysing samples obtained during the field programme carried out during the previous years. With regard to levels of biodiversity, species range and gene flow, work was progressing well using both traditional morphological techniques and the newly developed DNA-based techniques for all animal groups being investigated (polychaetes, nematodes and foraminifera). To date, the Kaplan project has resulted in seven scientific peer-reviewed publications, and it is expected that there will be more.

### **2. Nematode bar-coding**

71. Nematodes contribute 90 per cent of the meiofauna and 50 per cent of the macrofauna of the deep sea, so they should be a high priority for environmental monitoring in terms of both biodiversity and commercial interests. However, it was realized during the early stages of the Kaplan project that a standardized protocol

for the molecular identification of marine nematodes did not exist. It was therefore decided that it would be advantageous for the Authority to hold a small workshop related to nematode bar-coding in an effort to aid standardization and promote future marine scientific research in the Area.

72. A nematode bar-coding workshop was held in Kingston from 8 to 10 November 2005. The aims of the meeting were to produce a standard protocol manual for nematode bar-coding and to allow the scientists to meet in order to improve collaboration and propose grant applications to carry out investigations using the standardized techniques. Seven scientists attended the meeting and each made a brief presentation of their work outlining the current thinking in this field of research. However, the bulk of the meeting was devoted to group discussion, including the potential for funding and the design and use of the manual. The manual is currently being peer-reviewed for publication by the Authority.

73. The workshop participants noted that if contractors used the procedures outlined in the manual, the data could allow for a global synthesis that would benefit the scientific community. If the data were archived in one place, then contractors could access the data and reduce their costs. It was therefore suggested that it would be beneficial if the environmental data collected by contractors were not considered commercially sensitive such that it could be included in a global dataset. It was also noted that the creation of a central database of sequences and morphological images for all contractors to access would be much cheaper than each contractor compiling its own individual database.

### **3. Investigation into the macrofauna of the Clarion-Clipperton zone and its response to disturbance**

74. As part of the Kaplan project, the Authority supported a researcher at IFREMER to investigate the biological community in the zone associated with manganese nodules and the recovery of the community from disturbance caused by a mining device test carried out 26 years previously. As a result of the collaboration, the Authority is now in possession of a species list of organisms found in the zone (including photographs) and an analysis of the community and its recovery from physical disturbance indicative of the disturbance that would be created during manganese nodule exploitation. The third and final report on this activity was received from IFREMER on 19 December 2005 and completed the requirements of IFREMER under the contract.

### **4. Participation of scientists from developing countries**

75. In his annual report to the Authority at its eleventh session, the Secretary-General expressed concern at the limited role played by scientists from developing countries in marine scientific research in the Area. To help address this situation, the Authority has encouraged, wherever possible, scientific programmes that include researchers from developing countries. For example, an important component of the Kaplan project, including the collaboration with IFREMER, is to train scientists from developing countries in the use of molecular techniques to study biodiversity. In addition, the projects planned as part of the nematode bar-coding programme have included such scientists in their considerations and project proposals.

## **5. Eleventh symposium on deep-sea biology, 2006**

76. The triennial symposium on deep-sea biology is the foremost meeting covering the biological environment of the Area. The eleventh symposium will be held at the National Oceanography Centre, Southampton, United Kingdom, from 9 to 14 July 2006. Early indications are that it will be attended by up to 300 participants. One of the sessions will be devoted to management of the deep ocean. The Authority has agreed to offer support to the symposium.

## **6. Collaboration with the Census of Marine Life**

77. The Census of Marine Life is a global network of researchers in more than 70 countries investigating the diversity, distribution and abundance of marine flora and fauna. It is a 10-year programme that was initiated in 2000 and aims to investigate what lived in the oceans in the past, what currently lives there and what will live there in future. It is the largest cataloguing of marine species ever attempted. The Census is divided into a series of programmes each investigating a different marine region or environment. Of the 17 projects, three are directly related to the work of the Authority. These are the Chemosynthetic Ecosystems Group, the Seamounts Group and the Census of Diversity of Abyssal Marine Life. These programmes address the environments where polymetallic sulphides, cobalt-rich ferromanganese crusts and manganese nodules are found. The Authority has continued its collaboration with those groups. The workshop held in March 2006 was a direct collaboration with the Seamounts Group, and further discussions are being held with the Chemosynthetic Ecosystems Group regarding a joint meeting that has been proposed.

# **XII. Future work**

78. The mandate of the Authority is set out in the Convention and the 1994 Agreement. The detailed work programme for the Authority during the three-year period from 2005 to 2007 was approved by the Assembly at the tenth session. It focuses on the implementation of paragraph 5 (c), (d), (f), (g), (h), (i) and (j) of section 1 of the annex to the 1994 Agreement, in particular the following main areas:

- (a) The supervisory functions of the Authority with respect to existing contracts for exploration for polymetallic nodules;
- (b) The development of an appropriate regulatory framework for the future development of the mineral resources of the Area, particularly hydrothermal polymetallic sulphides and cobalt-rich crusts, including standards for the protection and preservation of the marine environment during their development;
- (c) Ongoing assessment of available data relating to prospecting and exploration for polymetallic nodules in the Clarion-Clipperton zone;
- (d) The promotion and encouragement of marine scientific research in the Area through, inter alia, an ongoing programme of technical workshops, the dissemination of the results of such research and collaborations with Kaplan, the Chemosynthetic Ecosystem Group and the Seamounts Group;

(e) Information-gathering and the establishment and development of unique databases of scientific and technical information with a view to obtaining a better understanding of the deep ocean environment.

79. It is expected that these will continue to be priority areas for the Authority. With respect to paragraphs 78 (c), (d) and (e) above, multi-year work programmes have been established and are being implemented as described in the present report. A comprehensive review and evaluation of these projects will be prepared for consideration by the thirteenth session of the Authority, in 2007, at which time a work programme for the period 2008-2010 will be proposed.

80. In 2007 it is proposed to convene a workshop on the standardization of environmental data and information required to be submitted by contractors under the regulations for prospecting and exploration for polymetallic sulphides and cobalt-rich crusts in the Area. Following the usual practice, the workshop will be preceded by a meeting of scientists to assist in formulating an agenda for the workshop.

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